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ORCHID STUDIES, X

BY
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ORCHIDS FROM AMERICA AND ASIA

Altensteinia Rosei *(Ames) L. O. Williams comb. nov.*

Aa Rosei Ames in Proc. Biol. Soc. Wash. 35 (1922) 81.

The genus *Aa* Reichenbach filius is referable to the older *Altensteinia* Reichenbach filius. This species has not been previously transferred.

Prescottia tubulosa *(Lindl.) L. O. Williams comb. nov.*

Cranichis tubulosa Lindley Gen. & Sp. Orch. Pl. (1840) 451—Kränzlin in Arkiv för Botanik 16 (1920) 1.

Prescottia pachyrhiza Richard & Galeotti in Ann. Sci. Nat. ser. 3, 3 (1845) 31.

? Prescottia Lindeniana Richard & Galeotti in Ann. Sci. Nat. ser. 3, 3 (1845) 31.

Galeoglossum prescottioides Richard & Galeotti in Ann. Sci. Nat. ser. 3, 3 (1845) 31.

Prescottia Galeottii Reichenbach filius in Linnaea 19 (1847) 377.

A photograph of the type of *Cranichis tubulosa* and of Lindley's analytical sketch of the species leaves no

doubt that it belongs to the genus Prescottia and that it is the same as the plant commonly determined as *Prescottia pachyrhiza* Richard & Galeotti.

The record of *Prescottia Lindeniana* which is available seems to indicate that the species is referable to *P. tubulosa*, but the record is not satisfactory for certain identification.

Cheirostylis longiflora *(Reichb.f.) L. O. Williams comb. nov.*

Anecochilus longiflorus Reichenbach filius in Seemann Fl. Vit. (1868) 294.

Odontochilus longiflorus Bentham & Hooker filius ex Drake Ill. Fl. Ins. Pacif. (1886) 312—L. O. Williams in Bot. Mus. Leafl. Harv. Univ. (Orch. Fiji) 5 (1938) 112.

? Odontochilus upoluensis Kränzlin in Mitteil. Instit. Allgem. Bot. Hamb. 5 (1922) 236.

In a restudy of the generic affinity of this plant it appears that it should have been placed in the genus *Cheirostylis* because of the connate bases of the sepals and because of the form of the column.

Fiji Islands: terrestrial, dense forest, southern slope of Mount Seatura, Mbua, Vanua Levu, at 600-700 meters altitude, flowers white, April 27, 28, 1934, *Smith 1623*; terrestrial, swampy rain forest, central plateau between Wainimala and Singatoka Rivers, Wainisavulevu Divide, Taunaisali, Tholo East, Viti Levu, at 3800 feet altitude, flower white, August 18, 1937, *St. John 18372*; "Feejee Islands", 1832-42, *Wilkes U. S. South Pacific Exploring Expedition.*

Physosiphon Lansbergii *(Reichb.f.) L. O. Williams comb. nov.*

Masdevallia Lansbergii Reichenbach filius in Nederl. Kruidk. Arch. 4 (1859) 317—Kränzlin in Fedde Repert. Beihefte 34 (1925) 104.

Physosiphon Lansbergii exhibits the generic charac-

ters found in *P. tubatus* (Lodd.) Lindley, the type species of the genus Physosiphon.

VENEZUELA: Prope coloniam Tovar, 1854-5, *Fendler 1369* (Gray Herbarium); epiphytic on palm trunks in humid forest, El Portachuelo between Maracay and Ocumare, Aragua, flowers yellow, May 8, 1925, *Pittier 11820* (in Pittier's Herbarium, United States National Herbarium, record in Ames Herbarium); epifita, selvas pluviales de Rancho Grande (Parque Nacional), Aragua, 1300 metros, 11 Abril 1937, *Pittier 13966* (Pittier's Herbarium, record in Ames Herbarium).

Epidendrum Deamii *Schlechter* in Beihefte Bot. Centralbl. 36, Abt. 2 (1918) 402.

Epidendrum tessellatum Bateman ex Lindley in Bot. Reg. 24 (1838) Misc. p. 7, non Roxb. (1795).

VENEZUELA: in crotch of *Protium heptaphyllum*, Rancho Grande, Aragua, at 800 meters altitude, May 26, 1938, *Williams 10131*.

The above collection, which was sent by Professor H. Pittier, seems to be the first record of the species in South America.

Epidendrum oncidioides *Lindley* var. **gravidum** *(Lindl.) Ames, Hubbard & Schweinfurth* in Bot. Mus. Leafl. Harv. Univ. 3 (1935) 104.

Epidendrum gravidum Lindley in Journ. Hort. Soc. 4 (1849) 114—Ames in Sched. Orch. 4 (1923) 42, t. 2.
Encyclia gravida Schlechter in Beihefte Bot. Centralbl. 26, Abt. 2 (1918) 472.
Epidendrum argentinense Spegazzini in Anales Mus. Hist. Nat. Buenos Aires 28 (1916) 135, fig. 2—Hauman in Anales Soc. Cien. Argentina 90 (1921) 147.
Encyclia saltensis Hoehne in Arq. Bot. Estado S. Paulo n.s. 1 (1938) 19, t. 10.

The publication of *Encyclia saltensis*, by Dr. Hoehne, for a plant which I had been determining for my correspondents in Argentina as *Epidendrum argentinense* lead

to a study of the species which shows it to be one of the varieties of the widespread *Epidendrum oncidioides* Lindley.

Dr. Hoehne has apparently overlooked Spegazzini's publication of *Epidendrum argentinense* for otherwise it is difficult to understand how he could propose the plant as new under one of the generic segregates of Epidendrum.

Pseuderia ramosa *L. O. Williams sp. nov.*

Herba epiphytica, scandens. Caule ramoso. Folia lanceolata, acuminata, multinervia, basi vaginis caulem obtegentes. Inflorescentia brevis, plusminusve quinqueflora; bracteae lanceolatae vel ovatae, obtusae vel acutae. Sepalum dorsale anguste ellipticum, acutum vel obtusum, tri- vel quinquenervium. Sepala lateralia elliptica, acuta vel obtusa, arcuata, tri- vel quinquenervia. Petala anguste elliptica, obtusa, arcuata, tri- vel quinquenervia. Labellum obovatum, acutum, integrum, apice breviter pubescenti.

A scandent epiphytic herb of unknown size, the specimen at hand 3 dm. long. Stem coarse, branching, the main stem up to 8 mm. in diameter; the lateral branches smaller, mostly about 3 dm. long, the nodes 1–2 cm. apart. Leaves lanceolate, acuminate, thin when dry, 7–15 cm. long, 1.5–3 cm. broad, many-nerved; leaf-sheaths covering the stems. Inflorescence short, lateral, 3.5 cm. or less long, commonly rupturing the leaf-sheaths at about the middle, usually about 5-flowered; bracts lanceolate to ovate, obtuse or acute, 4–10 mm. long, 2–4 mm. broad. Dorsal sepal narrowly elliptic, acute or obtuse, about 12 mm. long and 3 mm. broad, 3- to 5-nerved. Lateral sepals elliptic, acute or obtuse, strongly arcuate, 10–12 mm. long, about 3 mm. broad, the apex somewhat callose-thickened, 3- to 5-nerved. Petals narrowly ellip-

tic, obtuse, arcuate, 3- to 5-nerved, about 10 mm. long and 2 mm. broad. Lip obovate, acute, simple, about 8 mm. long and 5 mm. broad, with one strong central, canaliculate, carinate callus extending from the base to beyond the middle, apex densely short-pubescent. Column of the genus.

Pseuderia ramosa seems to be most closely allied to *P. vanikorensis* Ames, a species which occurs in the Santa Cruz Islands. The following characters will serve to distinguish them.

Pseuderia ramosa	*Pseuderia vanikorensis*
Lip obovate, about 8 mm. long.	Lip elliptic, about 5 mm. long.
Petals 3- to 5-nerved, about 10 mm. long.	Petals 1-nerved, about 7.5 mm long.

Pseuderia ramosa is the first species of the genus to be reported from the Samoan Islands. It extends the range from the Fiji Islands, where two species of the genus are known, to Samoa which now constitutes the known eastern limit of the genus.

SAMOA: epiphytic on tree trunks, wet scrub-forest, top of Pioa, Island of Tutuila, flowers cream-white, at about 500 meters altitude, January 2, 1932, *Christophersen 3533* (TYPE in Herb. Bishop Museum, Honolulu; ISOTYPE in Herb. Ames No. 50309).

Dendrobium nanarauticolum *Fukuyama* in Tokyo Botanical Magazine 51 (1937) 900, fig.

CAROLINE ISLANDS, Ponape Island: Kaporujo, grows on tree trunks on the top of the mountain, rare, March 13, 1936, *Takamatsu 689* (in Herb. Bishop Museum and Herb. Ames).

This is a second collection of Professor Fukuyama's recently described species. *Dendrobium nanarauticolum* belongs to the group of the subgenus Bolbodium which is characterized by diphyllous pseudobulbs. Professor Fukuyama did not indicate to which species he con-

sidered the plant to be allied to nor have I been able to find one which is closely allied to it.

Glomera (Euglomera) **carolinensis** *L. O. Williams sp. nov.*

Herba epiphytica, tenella. Radices filiformes, elongatae, glabrae. Caules leviter complanati, basi foliorum vaginis verrucosis obtecti. Folia linearia vel lineari-lanceolata, acuta, apice bilobata, paulo obliqua. Inflorescentia subcapitata; bracteae lanceolatae. Sepalum dorsale lineari-oblongum, obtusum vel acutum, plusminusve quinquenervium. Sepala lateralia connata, oblonga, basi mentum saccatum formantia. Petala oblanceolata, obtusa, paulo obliqua, trinervia. Labellum saccatum, mento saccato circumdato; lamina late ovata, obtusa, paulo carinata.

A slender epiphytic herb up to 2 dm. tall. Roots filiform, elongated, glabrous. Stems somewhat flattened, covered by the persistent verrucose leaf-sheaths. Leaves erect, linear to linear-lanceolate, acute, apex unequally bilobed, slightly oblique, 3.5–7.5 cm. long, 4–8 mm. broad; persistent leaf-sheaths verrucose, especially above, about 1.3–2 cm. long. Inflorescence subcapitate, about 6-flowered, subtended and partly enclosed by a large, scarious, triangular bract; each flower subtended by a smaller lanceolate bract; flowers small for the genus. Dorsal sepal linear-oblong, obtuse or acutish, about 5-nerved, 6 mm. long and 1.5 mm. broad. Lateral sepals connate except about 1 mm. at the tips, forming a strongly saccate mentum at the base, the joined sepals oblong, about 5 mm. long and 3 mm. broad. Petals oblanceolate, obtuse, slightly oblique, 3-nerved, about 6 mm. long and 1.7 mm. broad toward the tip. Lip saccate, the sac contained within the saccate mentum; blade of the lip broadly ovate, obtuse, somewhat carinate, 1.5

mm. long, 1.2 mm. broad; sac oblong, 2 mm. long and 1.3 mm. broad. Column of the genus, about 1.5 mm. long.

Glomera carolinensis seems to be most closely allied to *G. bambusifolia* Schlechter, a New Guinean species. From this species, however, *G. carolinensis* may be distinguished by the comparatively narrow perianth parts and the different formation of the sac and the blade of the lip. *Glomera bambusifolia* is a much larger plant, up to 6.5 dm. tall, while *G. carolinensis* does not exceed 2 dm. in height.

Glomera carolinensis is the only species of the genus which has been reported from Micronesia. The nearest generic allies, in point of distance, would seem to be in New Guinea which is somewhat more than a thousand miles away.

Caroline Islands, Ponape Island: Tolomail, grows on trees in open forest, February 11, 1936, *Takamatsu 988* (Type in Herb. Bishop Museum, Honolulu; Isotype in Herb. Ames No. 50281).

Bulbophyllum Christophersenii *L. O. Williams sp. nov.*

Herba epiphytica, repens. Pseudobulbi conferti, pyriformis, unifoliati. Folia oblanceolata, cuneata, obtusa, coriacea, petiolata. Inflorescentia uniflora, quam folia paulo brevior. Sepalum dorsale lanceolatum, acutum, basi trinervium. Sepala lateralia lanceolata, acuta vel obtusa, basi trinervia. Petala linearia, acuta, uninervia. Labellum cordato-lanceolatum, obtusum, basi auriculatum, carinatum.

Epiphytic herbs from a repent rhizome. Pseudobulbs crowded on the rhizome, pyriform, 1–1.5 cm. long, up to 8 mm. in diameter, monophyllous. Leaves oblanceolate, cuneate, obtuse, coriaceous, petiolate, 6–18 cm. long, 1–2 cm. broad. Inflorescence 1–flowered, somewhat

shorter than the leaves, pedicel comparatively short, about 1–2 cm. long, the 6–8 cm. long pedicellate ovary appearing to be the pedicel. Dorsal sepal lanceolate, acute, about 12 mm. long and 4 mm. broad, 3-nerved at the base, several-nerved above. Lateral sepals lanceolate, acute or obtuse, 3-nerved at the base, several-nerved above, about 14 mm. long and 4 mm. broad. Petals linear, acute, 1-nerved, 3.5–4 mm. long, 0.5 mm. broad. Lip cordate-lanceolate, obtuse, auriculate at the base, thick and fleshy, about 4 mm. long and 2 mm. broad at the base. Column about 4 mm. long, with two terminal arms about 1 mm. long.

Bulbophyllum Christophersenii has no near allies which are known to me, certainly there are no known species in Polynesia which are allied to it.

SAMOA: epiphyte in open woodlands, east of Olo, Island of Savaii, flowers purple, at 700–800 meters altitude, August 8, 1931, *Christopherson & Hume 2297* (TYPE in Herb. Bishop Museum, Honolulu; ISOTYPE in Herb. Ames No. 59298).

Bulbophyllum Nagelii *L. O. Williams sp. nov.*

Herba epiphytica, repens. Pseudobulbi anguste-obpyriformes, unifoliati. Folia anguste-oblonga vel lanceolata, obtusa, coriacea. Inflorescentia densiflora, spicata; bracteae latae lanceolatae, acutae. Sepala lanceolata, acuminata, carinata, extus bracteolis parvis ornata. Petala lineari-lanceolata, acuta, uninervia, paulo serrulata. Labellum arcuatum, bicarinatum. Columna cum duobus stelidiis.

Repent epiphytic herbs. Stems slender, about 2–4 mm. thick. Pseudobulbs narrowly obpyriform, about 1.5–3.5 cm. long, 0.8–1.5 cm. thick, monophyllous. Leaves narrowly oblong to lanceolate, obtuse, abruptly contracted at the base, coriaceous, 7–12 cm. long, 1.4–2.3 cm. broad. Inflorescence densely flowered, spicate,

mostly about 3 cm. long; bracts narrowly lanceolate, acute, about 8 mm. long; rachis slightly thickened, depressed at the base of each flower. Flowers small, about equalling the subtending bracts in length. Sepals lanceolate, acuminate, carinate, 3-nerved, 6–7 mm. long, about 3 mm. broad at the base. Petals linear-lanceolate, acute, 1-nerved, minutely serrulate, about 4 mm. long and 1 mm. broad. Lip strongly arcuate, about 3 mm. long and 2–2.5 mm. broad, very fleshy except the lateral margins of the disc; with two carinae which merge into a single carina toward the apex. Bracteole opposite the petals, inconspicuous, about 0.5 mm. long. Column about 2 mm. long, with two lanceolate apical stelidia; column-foot prominent, about 2 mm. long.

Bulbophyllum Nagelii is not closely allied to any Mexican or Central American species of the genus but is perhaps closest to *B. pachyrachis* (A. Rich.) Grisebach, which it resembles somewhat in habit and in the structure of the flower. *Bulbophyllum Nagelii* may be distinguished from *B. pachyrachis* by its linear-lanceolate petals and from all known Mexican Bulbophyllums by the monophyllous pseudobulbs.

It is indeed a pleasure to name this plant for Mr. Otto Nagel. Mr. Nagel, who has collected in many remote regions of Mexico as well as the more accessible areas, has doubtless collected more specimens of the Mexican Orchidaceae than any other man. Regardless of the difficulties under which he has often worked, his specimens have always been superlatively good.

Mexico: on oak trees in oak-pine forest, foot of Volcano Popocatépetl, north of Tetla del Volcán toward Santiago, longitude 98° 45′ west, latitude 18°54′ north, at about 1800 meters altitude, July 12, 1932 and May 15, 1933, *Nagel & Juan G. [onzáles] 1022 and 2228*; pine and oak forest, southwest slope of the Volcano Popocatépetl, Tetla del Volcán, Morelos, longitude 98°45′ west, latitude 18° 54′ north, at 1800 meters altitude, flowers dull green infused with

purplish-red, May 21, 1938, *Williams & Nagel 3864* (Type in Herb. Ames No. 50433).

Govenia liliacea *(La Llave & Lex.) Lindl.* var. **Purpusii** *(Schltr.) L. O. Williams comb. nov.*

Govenia Purpusii Schlechter in Beihefte Bot. Centralbl. 25, Abt. 2 (1918) 412; Beihefte Fedde Repert. 59 (1921) t. 61, fig. 241.

Govenia liliacea var. *Purpusii* resembles a small and immature *Govenia liliacea*, but all of the plants of the variety which I have seen seem to bear but a single leaf with the possible exception of one plant on the Conzatti and González specimens which may have two leaves as in the species. The structure of the flower is the same in the variety as in the species except that in the variety the apex of the lip tends to be plicate.

Mexico: Cerro de San Felipe, Oaxaca, at 3000 meters altitude, May 22, 1898, *Conzatti & González 703*; Matrata, Vera Cruz, May 7, 1937, *Matuda 1285*; cool rocky places, Sierra de Tequila, Jalisco, July 5, 1893, *Pringle 4419*; Cerro Verde, Oaxaca, July 1908, *Purpus 3613.*[1]

Vandopsis undulata *(Lindl.) J.J.Smith* in Nat. Tijds. Ned.-Ind. 72 (1912) 7.

Vanda undulata Lindley in Journ. Linn. Soc. Bot. 3 (1859) 42.

Stauropsis undulata Bentham & Hooker filius in Fl. Brit. Ind. 6 (1890) 27—Hooker filius in Ann. Roy. Bot. Gard., Calcutta 5 (1895) 36, t. 55—King & Pantling in Ann. Roy. Bot. Gard., Calcutta 8 (1898) 205, t. 275.

[1] The original number cited by Schlechter in his description is 2613 but that is probably a typographical error as there is a drawing of the type in the Ames Herbarium, prepared by Schlechter, and it bears the number 3613.

Fieldia undulata Reichenbach filius Xenia Orch. 2 (1862) 38.

Stauropsis polyantha W. W. Smith in Notes Roy. Bot. Gard., Edinburgh 13 (1921) 220.

Recently I have had the opportunity to examine authentic Chinese specimens of *Stauropsis polyantha* W. W. Smith and am unable to distinguish it from *Vandopsis undulata*. W. W. Smith records that the flowers of the Chinese and Burmese plants are almost twice as large as those of the Indian plant. While the flowers of the Chinese plants, which I have seen, are slightly larger than those of the Indian plants the difference is not great and hardily of noteworthy character.

Taeniophyllum (Subg. Geissanthera) **Hosokawae** *(Fukuyama) L. O. Williams comb. nov.*

Microtatorchis Hosokawae Fukuyama in Tokyo Botanical Magazine 51 (1937) 903, fig. 4–5.

The figures of this plant given by Fukuyama leave little doubt that the plant belongs to the subgenus *Geissanthera* (Schltr.) L. O. Williams of the genus *Taeniophyllum*. This would seem to be the fourth species belonging to this subgenus, the others are: *Taeniophyllum bracteatum* L. O. Williams, *T. papuanum* (Schltr.) L. O. Williams and *T. tubulosum* (J. J. Sm.) L. O. Williams.

Taeniophyllum Hosokawae is of further interest in that it is a considerable extension of the range of the subgenus.

Micronesia: Island of Ponape, *Hosokawa 5956*.

Taeniophyllum Parhamiae *L. O. Williams sp. nov.*

Herba parva epiphytica, acaulescens. Radices planae, uninerviae. Pedunculi breves, glabri vel verrucosi. Inflorescentia brevis, distichiflora. Sepalum dorsale lanceolatum, obtusum vel acutum, trinervium. Sepala lateralia

lanceolata, acuta, trinervia. Petala linearia vel linearioblonga, apice obtusa vel truncata, vix dentata, uninervia. Labellum saccatum; lamina anguste triangulari-subcordata, acuta, basi saccata, paulo scrotiformi.

Small acaulescent epiphytic herbs. Roots flattened, strongly 1-nerved, up to 25 cm. long or more. Peduncles short, glabrous but verrucose, at least when dry, up to 1 cm. long. Inflorescence probably 2–3-flowered, distichous; bracts acute, nearly 1 mm. long, semi-peltate, usually somewhat gibbous at the base. Perianth parts ocellate with crystalline inclusions, free to the base. Dorsal sepal about 3 mm. long and 1.2 mm. broad, lanceolate, obtuse or acute. Lateral sepals about 2.7 mm. long and 1.2 mm. broad, lanceolate, acute, 3-nerved, alate dorsally along the median nerve. Petals linear to linear-oblong, 1-nerved, apex obtuse or truncate, often dentate. Lip saccate; blade narrowly triangular-subcordate, acute, apical margins and the tip somewhat inrolled, about 2.5 mm. long and 1.5 mm. broad near the base; saccate base or spur of the lip slightly scrotoform, forming a 90° angle with the blade, about 2 mm. long and 1 mm. broad near the middle.

Taeniophyllum Parhamiae seems to be most closely allied to *T. decipiens* Schlechter, which occurs in the Samoan Islands, rather than to any species known to occur in Fiji.

It is with pleasure that this plant is named for Mrs. H. B. Richenda Parham and her two daughters, Miss Helena F. L. Parham and Miss Beatrice F. H. C. Parham, who have shown a keen interest in the native orchids of the Fiji Islands.

Fiji: epiphyte on Croton, Pender Street, Suva, June 26, 1938, *Parham 1*; in the old garden on breadfruit, Croton and coffee trees, Suva, August 24, 1938, *Parham 3* (Type in Herb. Ames No. 50094).

NOTES ON A REMARKABLE COLLECTION OF ORCHIDS FROM PANAMA

BY

CHARLES SCHWEINFURTH

MORE THAN HALF of a recent collection of orchids from the Province of Chiriquí, Panama, represents species which are unrecorded from Panama. However, as indicated in a letter received from C. H. Lankester, "a large series of plants is common to Chiriquí (from high elevations especially) and Costa Rica, without being truly members of the Panama flora . . . .".

All of these specimens were collected in Panama, Province of Chiriquí, Boquete District between January 5 and June 26, 1938 by Mrs. M. E. Davidson and are now incorporated in the herbarium of the Field Museum.

The Davidson collections are often amplified by notes of color or show characters which appear to be additional to, or at variance with those shown by other collections in the Ames Herbarium.

Elleanthus Tonduzii *Schlechter* in Fedde Repert. 8 (1910) 567.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, flowers white, *Davidson 123*; flowers yellowish green, *Davidson 161*, *247*, *365*.

These specimens have no good flowers, but the vegetative characters are apparently diagnostic.

Gomphichis costaricensis *(Schltr.) Ames, Hubbard & Schweinfurth* in Bot. Mus. Leafl. Harv. Univ. 3 (1934) 37.

Stenoptera costaricensis Schlechter in Beihefte Bot. Centralbl. 36, Abt. 2 (1918) 375.

Bajo Chorro, in rain forest at 6000-7000 feet altitude, *Davidson 163*; "Height 6-10 in.", leaves up to 10 cm. long, *Davidson 309*.

Stelis Skutchii *Ames* in Bot. Mus. Leafl. Harv. Univ. 6 (1938) 17, t. on p. 19.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, flowers very old, *Davidson 270.*

Stelis vestita *Ames* in Sched. Orch. 6 (1923) 56.

Boquete, dry hillsides, at 4000 feet altitude, epiphyte 4 to 8 inches tall, "Petals white with maroon centers", May 21, 1938, *Davidson 696.*

Restrepia subserrata *Schlechter* in Fedde Repert. Beihefte 19 (1923) 291.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, plant 3 to 6 inches high, flower yellow striped with maroon, *Davidson 116.*

Pleurothallis Cogniauxiana *Schlechter* in Fedde Repert. 3 (1907) 246.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, leaves oblong-lanceolate to elliptic-lanceolate, 11-11.4 cm. long, 1.7-2.5 cm. wide, *Davidson 109, 382.*

Pleurothallis pruinosa *Lindley* in Bot. Reg. 28 (1842) Misc. p. 75.

This species, recorded in Central America from Honduras and Costa Rica and in the West Indies from Jamaica to Trinidad, and also in French Guiana, is now reported from Panama.

Boquete, dry hillsides, at 3800 feet altitude, "epiphyte 1 to 3 inches high", flower pale yellowish green, May 24, 1938, *Davidson 708.*

Pleurothallis ruscifolia *(Jacq.) R. Brown* in Aiton Hort. Kew. ed. 2, 5 (1813) 211.

Epidendrum ruscifolium Jacquin Enum. Pl. Carib. (1760) 29.

Dendrobium ruscifolium Swartz in Nov. Act. Soc. Sci. Upsal. 6 (1799) 84.
Pleurothallis glomerata Ames in Sched. Orch. 4 (1923) 21.

This species, which appears to be frequent in Central America from Guatemala to Costa Rica, in the West Indies from Cuba to Trinidad and in South America as far as Peru and Bolivia, is here recorded from Panama.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, *Davidson 262*; epiphyte 8-13.6 inches tall, flower yellow, March 19, 1938, *Davidson 419*.

Pleurothallis uncinata *Fawcett* in Journ. Bot. 33 (1895) 12.
Pleurothallis Alexandrae Schlechter in Fedde Repert. Beihefte 19 (1923) 103.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, flower greenish yellow, *Davidson 220*.

Lepanthes elata *Reichenbach filius* in Beitr. Orch. Centr.-Am. (1866) 90.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, flowers yellow with maroon lip, *Davidson 237*.

While no good flowers are available on this specimen the vegetative aspect is characteristic.

Lepanthes eximia *Ames* in Sched. Orch. 5 (June 1923) 21.
Lepanthes abnormis Schlechter in Fedde Repert. Beihefte 19 (November 1923) 21.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, flower "tinted pink", *Davidson 186*.

Lepanthes insectiflora *C. Schweinfurth sp. nov.*

Herba epiphytica, pusilla. Caules caespitosi, filiformes, patentes, apice monophylli, vaginis arctis tubularibus cum ostiis ovatis ciliatis ornati. Folium ovatum vel elliptico-ovatum, erectum, apice acuminato tridentatum, basi cuneatum. Inflorescentiae singulae vel paucae, folii medium superantes. Racemi pauciflori. Bracteae extus muriculatae. Sepala triangulari-linearia, dorso alticarinata. Sepalum dorsale trinervium. Sepala lateralia uninervia. Petala transverse bilobata lobis valdissime inaequalibris; lobus posterior elongatus, angustissime triangulari-linearis; lobus anterior perparvus, ovatus. Labellum acriter bilobatum, lobis semiovatis. Columna gracilis labelli lobos superans.

Plant caespitose, spreading, very slender. Roots fibrous, flexuous, apparently pubescent. Stems filiform, about 2.6–7.5 cm. long, almost entirely invested by about six to sixteen close tubular minutely muriculate sheaths which terminate abruptly in spreading ovate mucronate ciliate mouths. Leaf solitary, erect, ovate to elliptic-ovate, up to 2.4 cm. long and 8 mm. wide, somewhat acuminate above with a tridenticulate apex of which the central tooth is slender and projecting, cuneate below to a subpetiolate base. Inflorescences one to five, shorter than the leaf, about 2- to 12-flowered; bracts infundibuliform, muriculate on the outer surface, about half as long as the slender pedicels. Flower membranaceous, segments spreading. Sepals triangular-linear, long-acuminate with a complicate apex. Dorsal sepal about 5 mm. long and 1 mm. wide at the base, 3-nerved through the basal third with the nerves carinate on the outer surface (the median keel is relatively high, thin and cellular-denticulate). Lateral sepals similar but narrower, 1-nerved and dorsally carinate with the keel cellular-denticulate, about 5 mm. long and 0.8 mm. wide at the

base. Petals transversely bipartite with the lobes horizontal, continuous and very unequal; posterior lobe elongate, very narrowly triangular-linear, about 3.2 mm. long; anterior lobe very short, ovate, about 0.7 mm. long. Lip sharply bilobed (with the lobes semiovate, about 1 mm. long and fleshy-thickened on the lateral margins), protuberant in the sinus into a minute porrect apicule. Column slender, surpassing the lip, about 1.6 mm. long, above with a relatively large hemispherical cavity below and posterior to the clinandrium.

This species differs from *Lepanthes tipulifera* Reichb. f. in having rather longer stems and very unequal lobes of the petals. It appeared in a mixture with another species of *Lepanthes*.

PANAMA: Province of Chiriquí, Boquete District, Bajo Chorro, at 6000 feet altitude, epiphyte in rain forest, 2 to 4 inches high, flowers burnt orange (?), January 22, 1938 *M. E. Davidson 185* (TYPE in Herb. Field Mus. No. 915594; DUPLICATE TYPE in Herb. Ames No. 49038).

Epidendrum confertum *Ames & Schweinfurth* in Sched. Orch. 10 (1930) 61.

Epidendrum prostratum Schlechter in Beihefte Bot. Centralbl. 36, Abt. 2 (1918) 407, non Cogn.

Bajo Chorro, in rain forests, at 6000-7000 feet altitude, flower reddish brown, *Davidson 246*.

Epidendrum paranthicum *Reichenbach filius* in Bot. Zeit. 10 (1852) 732.

Epidendrum Sancti Ramoni Kränzlin in Vierteljahrsschr. Naturforsch. Gesell. Zürich 74 (1929) 137.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, *Davidson 121*.

Epidendrum ramosum *Jacq.* var. **imbricatum** *(Lindl.) Ames, Hubbard & Schweinfurth* in Bot. Mus. Leafl. Harv. Univ. 2 (1934) 47.

Epidendrum imbricatum Lindley Gen. & Sp. Orch. Pl. (1831) 110, non Lam.

Epidendrum biflorum Cogniaux in Bull. Herb. Boiss. ser. 2, 2 (1902) 337, t. nec Forst.f., nec Ruiz & Pav., nec Rodr.

Epidendrum Boissierianum Schlechter in Beihefte Bot. Centralbl. 36, Abt. 2 (1918) 459.

Epidendrum santaclarense Ames in Sched. Orch. 4 (1923) 49.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, *Davidson 213*.

Epidendrum Sanchoi *Ames* in Sched. Orch. 4 (1923) 48.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, flowers pale yellow, *Davidson 114, 348*.

Epidendrum trachythece *Schlechter* in Fedde Repert. 3 (1907) 249.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, flowers white, *Davidson 124*.

Bletia Lankesteri *(A. & S.) Ames, Hubbard & Schweinfurth* in Bot. Mus. Leafl. Harv. Univ. 3 (1934) 41.

This species is now recorded from Panama.

Boquete, at 5000 feet altitude, herb on open hillside, 12 to 18 inches high (specimen in bud), "flower deep rose pink, central petals white at base", June 26, 1938, *Davidson 768*.

Bletia tuberosa *(L.) Ames* in Proc. Biol. Soc. Wash. 45 (1932) 1.

The present example of this widespread species is only about 3 inches tall, but the loose flower is approximately of the usual size.

Boquete, at 4000 feet altitude, terrestrial on open hillside, 3 inches high, flower white, June 24, 1938, *Davidson 741*.

Maxillaria meleagris *Lindley* in Bot. Reg. 30 (1844) Misc. p. 3.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, plant 8 to 15 inches high, the stem below the pseudobulb is lacking and doubtless has been broken off, flower "reddish brown, paler at base of petal", *Davidson 115*.

Maxillaria parvilabia *Ames & Schweinfurth* in Sched. Orch. 8 (1925) 62.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, flower pale yellow, *Davidson 126*.

Maxillaria valenzuelana *(A. Rich.) Nash* in Bull. Torr. Bot. Club 34 (1907) 121.

This distinct species is recorded from Cuba, from Honduras to Costa Rica and also from Colombia and Brazil. It is here reported from Panama.

Boquete, at 3800 feet altitude, epiphyte 6 to 10 inches high, flower "yellow, lip dotted maroon", May 12, 1938, *Davidson 636*.

Camaridium Biolleyi *Schlechter* in Beihefte Bot. Centralbl. 36, Abt. 2 (1918) 498.

Ornithidium Biolleyi Schlechter in Fedde Repert. 9 (1910) 29.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, flowers white with crimson lip, *Davidson 125*.

Camaridium Bradeorum *Schlechter* in Fedde Repert. Beihefte 19 (1923) 141.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, plant 2-3 feet high, flower white, each petal blotched with rose, *Davidson 118*.

Camaridium dendrobioides *Schlechter* in Beihefte Bot. Centralbl. 36, Abt. 2 (1918) 415.

Camaridium Jimenezii Schlechter in Beihefte Bot. Centralbl. 36, Abt. 2 (1918) 416.

Camaridium simile Schlechter in Fedde Repert. Beihefte 19 (1923) 239.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, *Davidson 240.*

Camaridium nutantiflorum *Schlechter* in Beihefte Bot. Centralbl. 36, Abt. 2 (1918) 417.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, *Davidson 308.*

Ornithidium costaricense *Schlechter* in Fedde Repert. 8 (1910) 456.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, *Davidson 325*; plant 3-4 feet tall, leaves uncommonly large (one is about 30 cm. long, another one is about 2.2 cm. wide), *Davidson 326.*

Ornithidium Pittieri *Ames* in Sched. Orch. 2 (1923) 35.

Bajo Chorro, in rain forest, at 6000-7000 feet altitude, plant 2-4 feet high, flowers pink, *Davidson 310.*